SIXPENCE

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HOMODYNE RECEPTION

Details of a little known method of reception are given in an article published in a recent issue of the "Wireless World." The following particulars of this new and interesting system are taken from the above mentioned article.

The "homodyne" system of reception is a little known member of the family of radio "dynes", so let us first see how it is related to its cousins hetrodyne, super-(sonic) hetrodyne and audodyne. The word 'dyne' is derived from the Greek for power, so that hetrodyne merely means putting in energy at a different frequency, and becomes "supersonic-hetrodyne" if the frequency difference is greater than audible, while autodyne means putting in its own power, i.e. a self-oscillating detector. Similarly, homodyne means that energy is put in at the same frequency, i.e. in synchronism with the carrier of the signal which it is desired to receive, and this is the system which may be able to help us with the selectivity problem.

Interference may be divided into two categories, the type which involves the carrier of the wanted signal, and the type which does not. In the first category we have the direct hetrodyne between the wanted carrier and a neighboring carrier, "side-band splash" which consists of hetrodyns between the wanted carrier and the side-bands of the interfering signal, and cross modulation; in all of these the output of interference is merely proportional to the weaker of the two frequencies which are beating together so that increasing the strength of the wanted carrier makes no difference to the interference. Before we can benefit from the homodyne principle therefore, adjacent carriers must be spaced far enough apart for the hetrodyne note to be outside the audio frequency band, or alternatively the hetrodyne must be eliminated by means of a "whistle filter" of some sort.

It seems likely to take a very long time to produce sufficient public demand for high-fedility broadcasting on the medium wave band to secure the sacrifice of a number of stations to

adequate stacing of channels; in fact it is a debatable point whether the introduction of wide-band U.H.F. broadcasting would render superfluous high fedility in the medium-wave transmissions, or whether the experience of really good quality would lead to a demand for it on all transmissions. Assuming, however, that we have by some means eliminated the adjacent channel cross-modulation, the residual interference will consist of the whole modulated signal (carrier plus side bands) of a transmitter on a neighboring frequency.

SELECTIVITY LIMITATIONS

There is an essential distinction between the wanted and unwanted signals, by reason of the fact that they have different carrier frequencies and so it may be possible to eliminate the interference which consists solely of the independent signal more effectively than hetrodyne etc. which involve the carrier of the desired signal. But first one must answer the natural question, why not rely on selective circuits? A satisfactory receiver would need adjacent channel selectivity of 10,000; 1. If anyone can design such a receiver we need not worry about homodyne receivers.

The phenomenon underlying homodyne reception actually occurs to some extent in every receiver using a linear rectifier, that is to say almost every modern receiver when a reasonably strong signal is tuned in; it is that a linear rectifier is most sensitive to signals in the same phase as the strongest signal out of several applied to it. In the ordinary diode rectifier, the diode is automatically biased back by the signal so that it is only conducting for a small part of the cycle, say the extreme positive values of the voltage wave as shown in Fig 1.

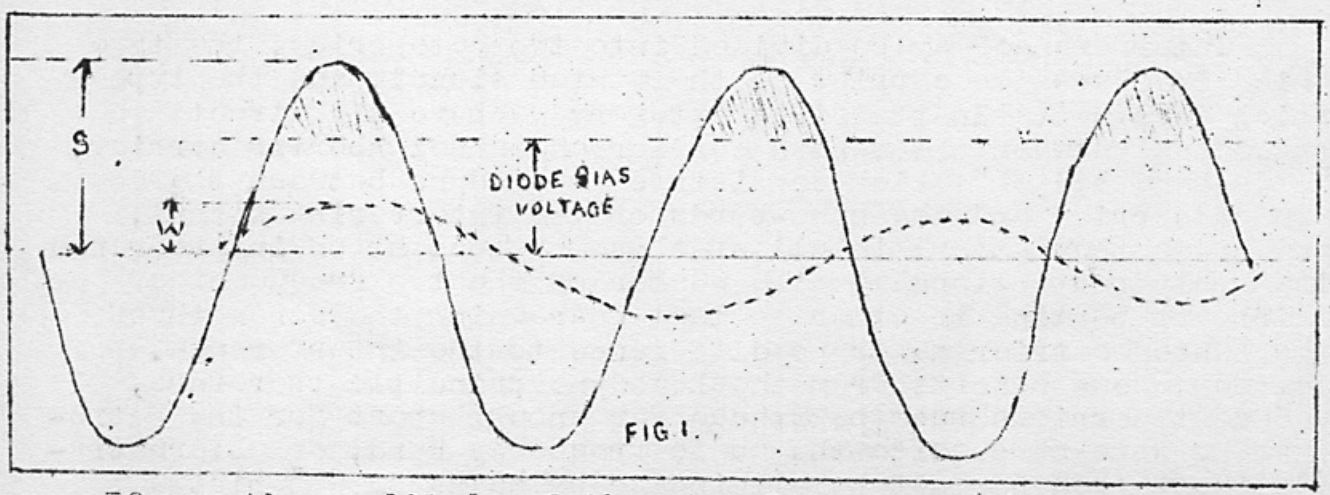


FIG 1.

If now the amplitude of the signal is varied by modulation there will be a change in the height of the voltage peaks, therefore an increase or decrease of diode conduction, and this in turn will change the bias voltage so that conduction occupies

the same proportion of the whole cycle as it did for the original amplitude. But the bias voltage on the diode is in fact the rectified output, so that variations of this voltage with the input represents an output signal proportional to the amplitude modulation of the input signal.

DETECTOR DISCRIMINATION

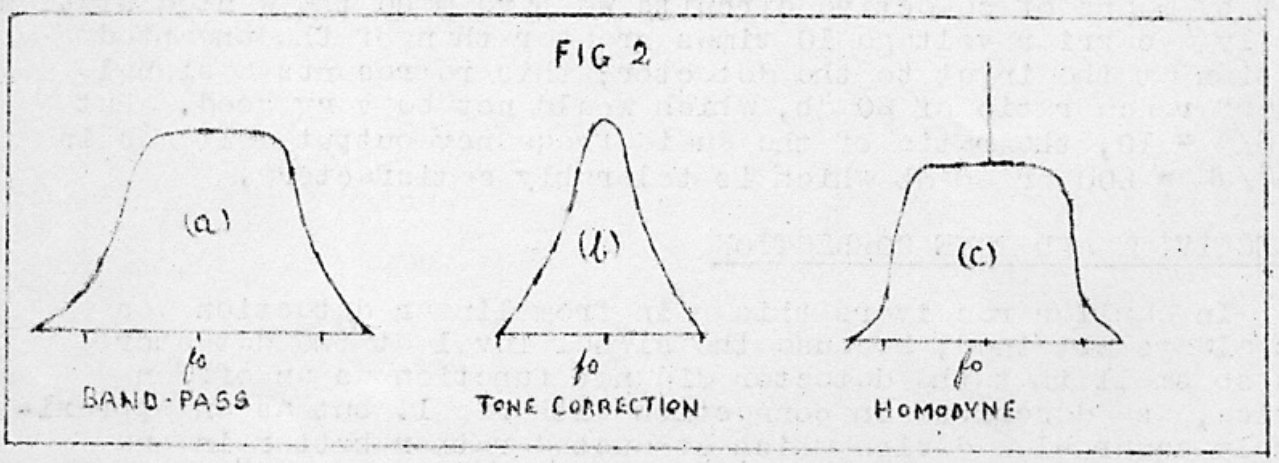
Now suppose there is added to the input a smaller signal, at a different frequency, as suggested by the dotted curve in Fig 1. The first positive peak of this second signal falls fairly well on the conduction period (determined mainly by the strong signal) and therefore increases the rectified current; but the second positive peak falls in a non-conducting period and therefore cannot affect the output, while the second conduction period is accompanied by a negative peak of the smaller signal, which reduces the rectified output and so tends to oppose the effect produced in the first conduction period. It is obvious that the weaker signal has relatively little effect if of different frequency from the stronger one, since it is the latter which decides when the diode is conducting; as often as not the weaker signal comes up positive when the diode is thoroughly cut off by the stronger signal, and on these occasions when the diese is conducting, the weaker signal is as likely to be negative as positive. This is only a very rough picture of the action, but when it has been properly worked out mathematically, the ratio of the AF outputs due to modulation on the strong signal S and on the weak signal W is approximately 2 S2/W2, and the phenomenon is known as rectifier discrimination. To see how useful this is, suppose that by means of selective circuits we have made the wanted station supply a carrier voltage 10 times greater than of the unwanted station at the input to the detector; this represents a signal interference ratio of 20 db, which would not be very good. But if S/W = 10, the ratio of the audio frequency output voltages is 2 S2/W2 = 200 or 46 db which is tolerably satisfactory.

SELECTIVITY AND TONE CORRECTION

In earlier receivers this gain from linear detection was not always obtained, because the signal level at the detector was so small that the detector did not function as an off/on device, as described in connection with Fig 1. but as an approximately square-law device which conducted rather better in one direction than the other; since the stronger signal was thus not sufficient to stop conduction for part of the cycle, the weaker signal could always produce some effect, regardless of its phase relation to the stronger signal, and no rectifier discrimination was obtained. One of the first specialised systems to obtain this advantage was the 'tone correction' type of receiver. The RF circuits were made of maximum Q, so that a very high gain was obtained at carrier frequency and low modulation frequencies, though the

higher side-bands were relatively cut by a very large amount and after detection the severe top cut was corrected by AF tone correction curcuits. Owing to the strong carrier, this gave good 'rectifier discrimination,' but the top boost in the AF circuits exaggerated any harmonics produced in the process of rectification and the popularity of this system was short lived. In fact it died a natural death with the development of the super-hetrodyne ans AVC; the latter required a large enough amplitude at the detector to ensure linear rectification, while the former provided the means of getting sufficient gain, and at the same time made it technically possible to use selective band-pass circuits with a square topped response, giving good adjacent channel selectivity without requiring tone correction.

But good tuned circuits are expensive and critical in adjustment, and of recent years the number of high powered transmitters has been greatly increased, so that once again selectivity is a problem. The tone correction system was on the right track, but the top boost in the AF circuits was an intolerable nuisance; the solution then appears to be to increase the application of the carrier only, while retaining a uniform amplification for all the side bands from lowest to highest, and this is the homodyne system. The three systems are represented diagrammatically in Fig 2. Diagram (a) normal receiver with square topped response curve; (b) sharp circuits requiring subsequent tone correction, and (c) homodyne receiver with carrier only accentuated.



If wanted and unwanted signal reach the detector with equal amplitudes, the result will be a hopeless jam; but if we can add to the desired signal an artificial carrier of just over 30 times the existing carrier strength of either, we immediately obtain a rectifier discrimination of 2 S2/W2 equivalent to 66 db and reception is perfect without any disturbance of the

audio frequency response characteristic. In fact the audio frequency performance is improved, because an incidental advantage of the homodyne system is the elimination of one source of distortion in the detector. With a normal diode detector feeding a load circuit whose AC impedance is less than its DC resistance, distortion occurs when the depth of modulation exceeds some value such as 75% (depending upon the ratio of AC to DC load): but when the carrier has been artificially increased for homodyne reception, the depth of modulation will always be small, so that the ratio of AC to DC detector loads is no longer critical.

ARTIFICIAL CARRIER

The problem of course, is how to produce this artificial carrier, which must be exactly in phase with the original carrier of the wanted signal, and there are two main lines of attack. According to one method the carrier is selected from the input by some form of filter, and amplified more than the side bands. There are various methods of inserting the filter in the circuit and a method of selective negative feedback has been suggested as suitable; but this does not go far towards solving the problem, for the filter still has to have a very narrow response, even is it is connected in the negative feedback line instead of in a straightforward coupling between two stages of amplification. It can be assumed that the receiver is a super-het and probably the IF will be 465 kc, while the lowest audio frequency can be put at 50 cycles . (Any rise in the response to frequencies below 50 cycles can be easily offset by a falling off in the characteristics of loud speaker and AF amplifier.) The carrier selecting filter must therefore have a band width of not more than plus or minus 50 c/s in 465 Kcs, which is a fairly difficult proposition even for a crystal filter. In addition the intermediate frequency must then be correct to something like 20 c/s, which means that both the accuracy of tuning and the stability of the local oscillator must be as good as 20 parts in a million for the higher frequency end of the medium wave band, and proportionately better for short wave working.

The other line of attack is to use a local oscillator somewhat similar to the IF beat oscillator used for CW reception, to generate the extra carrier voltage, and synchronise this oscillator with the signal carrier. Probably most experimenters have done this at some time or another with a receiver using a reacting detector; if the reaction control is smooth enough, reception free from beat note can be obtained although the set is gently oscillating. But this is not really a fair example of homodyne reception since it involves also a great increase of Q of the tuned circuit, and hence loss of high audio frequencies, which would not be present with a separate oscillator. In any case this is hardly a method of reception to let loose on the

general public. But granted the use of a super-het circuit and a separate oscillator valve for generating the carrier which is then a practically constant frequency there are possibilities in the way of designing the oscillator specially so as to hold synchronism over as wide a range of frequency as possible, though even so, tuning would need to be exceptionally accurate, and oscillator drift small. One of the troubles is that on 100% modulation the carrier of the signal to be received falls to zero, and the homodyne oscillator would then be almost certain to drop out of synchronism. Another snag is that the artificial carrier from the local oscillator would predominate in the output from the detector, so the DC component could not be used for AVC, which would have to be derived from independent IF circuit free from carrier injection.

POSSIBILITIES OF DEVELOPMENT.

It is clear that a good deal of development would have to be done before a commercial broadcast receiver could be built on the homodyne principle. However, looking at the transformation of the radio receiver during the last 10 years or so and the parallel transformation of the television receiver from a 30 hole scanning disc in front of a neon lamp into the cathode ray type of receiver, it does not seem unduly optimistic to say that the difficulties inherent in the homodyne system of reception could be overcome in a commercial design.

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ELECTRIC SOLDERING IRONS.

In wireless work where most fluid fluxes are banned on account of their corrosive properties, special kinds of soldering paste are used. Generally speaking, if a soldering iron becomes overheated to such an extent that the tinning is burnt off, it becomes necessary to file the copper bit heavily before it can be re-tinned. The life of the iron is thus greatly reduced and metal is wasted. This waste can be avoided by adopting the following method.

With the hot iron first melt half a dozen pellets of solder on to a flat iron plate. Then take an old rough file and dip the end of it into the flux and rub the file tip over one surface of the bit. The heat of the iron causes the flux to flow over the cleaned part. Next pick up a pellet of solder from the iron plate by striking it smartly with the cleaned surface. Give another light rub with the flux coated file, and a clean, bright tinned surface will result. Repeat for the other surfaces of the bit.

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WIRELESS IN THE LUFTWAFFE

Some months ago we published a general description of some of the radio gear used by the Luftwaffe. This information was taken from the Wireless World. Further details of this equipment have been published in the same journal, and we are passing on this extra information for the benefit of those who do not have access to the journal named.

One of the most interesting and unconventional features of the equipment was the iron cored direction finding loop. It is mounted externally to the 'skin' of the plane and a flexible drive coupled to a handle on the compass repeater rotates it through a worm gear in the base. The shaft runs on ball bearings, and a 360 degree scale is attached to the main gear wheel for checking agreement with the scale on the repeater compass.

The aerial coil former is made of bakelised fabric ¼ inch thick and 13 inches long. It is of oval section measuring 3 inches on the vertical and 4 in. on the horizontal axis. The windings consist of 8 turns of litz wire approx. 0.08 in. in diameter, wound symmetrically on each side of the former and connected in parallel to give an inductance of 3.2 uH. Inside the former the iron dust core is built up of ring sections placed coaxially. The core material has been taken out and measured, and its permeability is of the order of 60.

Connection to the receiver is made through a screened twin cable with a characteristic impedance of about 30 ohms. The cable is half an inch in diameter and is divided in the centre by insulating material. Each half is occupied by a semicercular conductor of tinned copper braid.

D.F. LOOP PERFORMANCE. . . . The performance of the loop antenna has been checked, and it is found to give a polar diagram of normal type. For purposes of comparison a second loop aerial was constructed without an iron core, and the turns adjusted to give an inductance equal to that of the original. The energy pick-up of the two loops was measured by interchanging, and the iron cored loop gave an increase of 10 db over its air cored equivalent. The iron core greatly increases the weight and the loop is actually 3 lbs heavier than the DF receiver itself.

The superhet circuit used in the receivers comprises 8 valves starting with a stage of RF amplification, followed by a separate oscillator with injection to the grid circuit of the mixer valve. There are two IF stages, the output of which is rectified by an anode bend detector and then passed to the AF output stage. A BFO is adjusted to beat at 1000 cps with the intermediate frequency. No AVC is used. All RF coils have

closed iron dust cores and the inductance is adjustable by means of a threaded end section . Fixed ceramic condensers are used to tune the IF circuits and a combination of positive and negative temperature coefficient ceramic condensers are used in the oscillator circuit associated with the frequency changer.

MECHANICAL CONSTRUCTION .. Screening between stages is very efficient and accounts for the high overall gain obtained. The chassis is of the die-cast construction and the compartments are arranged round the four sides of a central three-ganged condenser. The fixed plates are earthed and the rotors, which are mounted in a ceramic spindle, are live. Location of the tuning condenser for operation on 'spot' frequencies is effected by means of discs mounted behind the dial. Each disc has a notch which engages a projection on a spring loaded lever. The common spindle for the four levers is mounted eccentrically and provided with a knob. Thus all four spot frequencies can be varied simultaneously over a small range. Four locking screws passing through the main knob permit independent adjustment of the setting of each disc, and a mechanical indicator system shows which spot frequency is in use.

Everything about the receiver, and indeed about the equipment as a whole, is very heavy and expensive and gives the impression of being designed by a radio engineer with a ground station outlook rather than one who has specialised in aircraft design. The equipment is however designed as a complete installation, and the units fit together to occupy very little space with short interconnecting cables. The latter are easily replaceable when shot away, and the units themselves are simple to dismantle and reassemble for servicing.

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SILENT KEYS

It is with regret that we chronicle the passing of;-

Leonard P.Hyland VK7LP who passes away on the Third of July 1942 after a short illness. Len who was only thirty years of age, contracted a chill whilst at his post during a big A R P demonstration in Tasmania late in June.

Herbert T.Brunsden VK2BX who died at the Royal Prince Alfred Hospital, Sydney after a short illness. Bert, as he was known to many amateurs throughout Australia, was one of the pioneers in this country on ten metres. Despite bad health during later years he always maintained a keen interest in the Institute and Amateur Radio generally.

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SLOUCH HATS AND FORAGE CAPS

Life is full of disappointments for all War Correspondents - of that fact I am assured. Just listen to this tale of woe.

Wilf - 2ALF - you may know was on the H.M.A.S. Canberra, just the place to turn himself into frontline news. Now I ask you, does he, being a wireless op., leave the shop at the very last moment, swimming through shark infested waters, etc. etc. reaching safety and spending weeks and weeks surrounded by V.A.D's etc. Not he - he's modern. I see his photo in a paper, as wounded and think - what copy! But alas he is no help at all. The wounded rang me up the same day and then following - amongst other conversation resulted. Says 2 YC - I thought you were in hospital. Of no, only a bit of shrapnel in my thigh, been there 12 days, its no trouble - may not even bother getting it out. And so away goes half my news, so I hopefully try again. How about the sinking, Wilf - did you have any fun - have to swim far. Swim, why I just climbed down the side on to the deck of a destroyer - but I've a nice Yank giggle suit - and that's all he had to say.

Now, I ask you, how can I write adventure stories about hams like this?

Anyhow, I got Jones, 3 RJ, back to VIS. I must now see if I can raise a J.

2AFN - Tom Slawson. Tom is yet another ham of whom the news is "Missing in Malaya." His brother also in the sigs has been posted officially missing, but so far Tom's name has not appeared.

X2BX - Bill Smith is now W.O. in the RAAF and has just been posted to an advanced station. Judging by how well he looked when seen in VIS the RAAF life "sure suits him."

2AMS - now a P/O and swapping over from a W/Op. to an observers job. Had a nice stay in Sydney but now believed "far away."

2 ACJ - finished his training in Canada - now a P/O. News of him is in a message sent home which says "Finished first job and got back safely." ACJ acts as navigator, so he's the chap who got them "there and back." So keep it up O.M. Believe he stopped a VE's car while in Canada. VE 4 turned out to be a very well known dx bird who had a gala day with VK's during a contest.

2AMQ - back in Sydney for keeps from Darwin - looking for a bit of peace and "quiet." Never struck any W hams up there. AMQ was in the Engineers - said they built roads and roads and various types of houses.

2ALG - news is - he "copped" a small piece of shrapnel in the leg. Nothing serious we hear. Hope it didn't mean the loss of that lovely ginger beard I've heard so much about. O.M.

And now 2NO very kindly fills up the rest of the column - what a correspondent.

(2NO - (Capt. Don B. Knock) Sigs. A.M.F.) recently found himself in VK3 at short notice, doing a refresher course before tackling the tough (?) job of teaching Army YL's to be efficient sig. women. Looking around the W/T class he found that he had unexpectedly welcome company in the form of Al Joscelyne (VK2AJO) and Les Taylor (VK2CL) both Corporals on the same tough (?) job!! The opening lecture of the course was delivered by a L/Co. who turned out to be VK3DC! During the instructional period VK2NO was shown over a communication centre in VK3 and has not yet quite recovered from the shock of revelling in what is virtually a ham's dream. Miles of rhombic arrays soak up the R.F. amps from QRO Tx's that are keyed by UHF channels instead of lines from the control centre. Rx's such as SX28's grace tables and the store shelves carry vast stocks of 813's, 810's, 100TLs, ampere HF tubes and the latest R.C.A. UHF types. Every type of RX tube imaginable is also on hand in quantity. High light of the array of gear was a complete FM station of W manufacture. The C.O. and 2/ic of the outfit are both prominent VK 3Is - hence the powerful ham flavor to everything. The VK2's who put in the period in VK3 don't think much of Vic's WX in winter though. They all developed a choice brand of flu - and 2NO landed in a Military Hospital most of the time with something akin to pneumonia. Nevertheless, Don reckons he knows just where he will be looking for government surplus radio gear in the days when the big stouch is over.

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D I V I S I O N A L N O T E S

.. FEDERAL HEADQUARTERS. ..

The usual monthly meeting of the Federal Executive was held at Y.M.C.A. Buildings on Thursday 20th August. The Secretary informed the Meeting that details of the Emergency Communication Network, that is to operate in New South Wales, were informed on to all States. In addition another appeal was made to the various Divisions to provide material for "Amateur Radio" with a view of making the magazine more of an Australian publication than it is at present.

The possibilities of a W.I.A. Prisoners of War Fund was discussed, and it was decided to circularise the States with the object of obtaining their views and if favorable get the Fund under way as soon as possible.

THE EMERGENCY COMMUNICATION NETWORK

Considerable progress has been made with the preliminary organisation of the above Network. Nearly one hundred and fifty applications for enrolment were received by the Technical and unfortunately, at this juncture, all offers to assist could not be availed of; nevertheless, the men whose services cannot be used for the present have been placed on the Reserve of Officers. Letters of appreciation of the work done by the Institute continue to pour in from all quarters, particularly from those chaps on Service and many offers of the use of equipment are gratefully acknowledged.

For the time being the operations of the Network will be confined to Sydney and Suburbs, but eventually it is anticipated that every large town will have its installation until such time as the Network becomes State wide. Just how long this will take is difficult to say. The State War-Effort Co-Ordination Committee state where a station is to be installed, and it depends entirely on that body just how soon the scheme expands.

The original intention of the Technical Committee, who by the way consists of R.A. Priddle VK2RA, A.V. Bennett VK2VA, P. Dickson VK2AFB. W.G. Ryan VK2TI and W. McElrea VK2UV, was to make use of existing equipment in order to get the Network in operation quickly, and then eventually substitute this equipment for a standardised station. It was found however that nearly every Member who would have to re-build so it was decided that each station would be equipped with standard tx, rx and power supplies from the inception. The transmitter will consist of 4 stages crystal controlled, using an 807 in P.A. cathode modulated. The receiver will be a super regen. with a stage of R.F. and there will be two power supplies one of which will be independent of the A.C. mains.

At the present time the members of the Technical Committee are visiting the various localities where stations are to be installed and mee ting the Amateurs who are interested and putting before them full details of the scheme and obtaining details of the gear that will have to be released from seal.

Those applicants whose services are accepted will be investigated by Security Service, and if satisfactory will be enrolled as Members of State Co-Ordination, attested, issued with Police Passes, Arm Bands and where necessary stickers for the windscreen of cars, and a Certificate to be issued by the Institute, stating that they are Members of the Emergency Communication Network.

A word of warning. Do not touch any seals until such time as you receive permission from the P.M.G. to do so and do not make any direct applications to the Senior Radio Inspector. The Institute will take care of all applications and they will go through in toto.

Once permission has been received to build R.F. equipment and units are completed, exercises will be held each week until such time as proficiency is gained in procedure and the quick handling of messages. Those exercises will be made realistic and will be part of State Co-Ordination trials that are held from time to time.

NEW SOUTH WALES DIVISION

The August General Meeting of the Division was held at Y.M.C.A. Buildings on Thursday 20th August.

In declaring the Mee ting open, the chairman extended a welcome to several new Members who had joined up in appreciation of the work done by the Division in obtaining permission to form the Emergency Communication Network. In all twenty five applicants were admitted to Membership.

The chairman gave a resume of the progress made in putting the Emergency Communication Network into operation. The response to date has been excellent, the number of applications for enrolment far exceeding the Technical Committee's expectations. One very pleasing feature was the response from Members on Service and others who could not operate who offered the use of their gear.

Members were informed of Federal Headquarters' suggestion that a Prisoners of War Fund should be established in order to provide funds for those Amateurs unfortunate to be made captive. This division favored the suggestion, but were of the opinion that a central fund should be established and administered by Federal Headquarters. Each Division should endeavor to raise funds and forward them on to F.H.Q. together with a list of amateurs, not necessarily members of the Institute, who were known to be Prisoners of War, and that it would be the duty of F.H.Q. to see that they were kept supplied with comforts.

An appeal for Technical Articles for "A.R." was made to members present and this also goes for you chaps that weren't. As you know August issue of the magazine incorporated the Monthly Bulletin and comprised fourteen pages. VK2 has given an undertaking to provide at least nine of these pages and YOU can help by writing an article of interest to Amateurs generall y, or should you not fee l capable of this, why not send that letter that you received from that ham

on Service along to 2YC for inclusion in "Slouch Hats and Forage Caps". Remember chaps that the magazine is an all in effort and it must not be left to one or two chaps to keep it going.

With reference to the loss of H.M.A.S. Canberra, members will be pleased to learn that all the radio men were saved. Other than Wilf Harris VK2ALF it is not known whether there were any other hams on board. Wilf, I understand, is at present carrying a piece of shrapnel around with him as a memento.

Regarding the loss of the Sunderland flying boat carrying the Duke of Kent, Flight Lieutenant F. M. Goyen is not the same F.M. Goyen VK2UX who, prior to joining the R.A.A.F. and receiving his commission, was Chairman of the New South Wales Division of the Institute. Due to the similarity in names both christian and surname, several members have rang the Institute making enquiries, but Members are assured that Frank is still hale and hearty, making the boys smile each payday.

Amateurs will be pleased to learn that Arthur Henry VK2ZK was recently promoted to the rank of Major. Arthur left Australia many months ago and served through Egypt, Libya, Greece and Syria, and earned his promotion through sheer merit, passing through the hardest school - Active Service - with honor. Members of the Special W/T Section speak highly of 2ZK's work as a technician.

The next meeting of the Division will be held at Y.M.C.A. Buildings, Pitt Street, Sydney on Thursday 17th September, commencing at 8 p.m.

VICTORIAN DIVISION.

The usual monthly mee ting of the Victorian Division was held in the VIA Rooms on Tuesday September 1st. Unfortunately George Benwell 3KQ who was to have delivered a lecture was unable to be present. George is in the Navy and was drafted a few days prior to the meeting.

However, the members present found sufficient to keep them occupied in the discussion on the new Security Regulations requiring certain transmitting apparatus to be taken into official custody for the duration of the war. Many varied opinions were expressed - the meeting being unanimous as to the value, as a Security measure, of the sealing of certain equipment when transmitters could be constructed with the greatest of ease from receiving components.

After a long discussion it was decided that the Secretary should write to the Senior Radio Inspector and request that experimenters be given the opportunity to re-pack their gear as, at the time of sealing, no mention was made of the fact that

it should be in a transportable condition. Members present were not happy at the thoughts of what would certainly happen when power transformers started bouncing about in a box with loose transmitting tubes . The question of insurance was also brought up and it was decided that the Department be requested to indemnify the owners against loss or damage whilst the gear was in custody.

Federal Headquarters were also to be notified of the action taken by this Division.

A letter was received from the Federal Secretary concerning the establishment of a Prisoners of War Fund to cover the cost of p arcels sent to Hams known to be prisoners of War, members and non-members alike. It was decided that a collection be taken at each meeting and also that Council be asked to consider the matter of a regular contribution. The sum of ten shillings was collected at the meeting. Members not able to attend meetings may forward contributions to the Treasurer if they so desire.

The next mee ting of the Victorian Division will be held on Tuesday October 6th, in the Institute's Rooms.

Members are reminded that Amateur Radio will not be forwarded to unfinancial members after this issue.

Ken Allen 3UH is back in VK on leave. His ship was sunk in the "Musso's Little Pond."

3WG..we learn departed for the near north complete with Tin hat and other sundry equipment. Best of luck Bill.

3FR..Sergt. Fred Smith, sorry Staff-Sergt, is with a sigs station in VK6. Fred also got married recently.

3GY..Clem Day on receiving his military call-up transferred to the R.A.A.F. as a wireless mechanic.

3HF..Harols Fuller is now an engineer at 3YB Warrnambool.

3YL..loves the Army and the Air Force..just ask her. She's been keeping a record on the map at the WIA Rooms.

3YK..has been promoted to Flying Officer.

3XH..S. W. Johnson is a Lieut Colonel with L.H.Q.

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RE-PACKING OF GEAR

Amateurs desiring to re-pack their gear should ring Mr.Pearson, Central 5551, exten.26 . Suitable arrangements can be made with Mr Pearson.

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THE WIRELESS INSTITUTE OF AUSTRALIA

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The Division meets on the Third Thursday of each month at Y.M.C.A. Buildings, Pitt Street, Sydney, and an invitation is accorded to all Amateurs to be present.

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